The opinion in support of the decision being entered today was <u>not</u> written for publication and is <u>not</u> binding precedent of the Board.
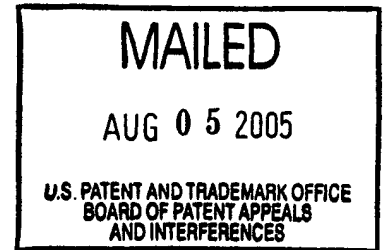
Paper No. 24

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

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<u>Ex parte</u> JERROLD HAUCK
and DAVID W. LAFOLLETTE

_____

Appeal No. 2005-0782
Application No. 09/059,533

_____

ON BRIEF

_____

Before, JERRY SMITH, DIXON, and LEVY, <u>Administrative Patent Judges</u>.

LEVY, <u>Administrative Patent Judge</u>.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134 from the examiner's final rejection of claims 1-11, which are all of the claims pending in this application.

BACKGROUND

Appellants' invention relates to data transfer system, and in particular, to bandwidth reclamation on a full duplex bus (specification, page 1). Specifically, a transceiver is provided. A state machine is coupled to the transceiver to generate a NAK concurrently with the receipt of a packet when the packet cannot be successfully accepted (specification, page 3). Claim 1 is representative of the invention, and is reproduced as follows:

1. A method comprising:

transmitting a primary packet from a source node towards a destination node on a full duplex bus;

receiving a NAK while the primary is being transmitted; and

aborting the transmission without sending all of the primary packet.

The prior art reference of record relied upon by the examiner in rejecting the appealed claims is:

Boal et al. (Boal)   GB 2 266 032 A   Oct. 13, 1993

Claims 4-11 stand rejected under 35 U.S.C. § 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or to which it is most nearly related, to make and/or use the invention; i.e., lacking enablement.

Claims 4-11 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite.

Claims 1-11 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Boal.

Rather than reiterate the conflicting viewpoints advanced by the examiner and appellants regarding the above-noted rejections, we make reference to the examiner's answer (Paper No. 18, mailed May 2, 2003) for the examiner's complete reasoning in support of the rejections, and to appellants' supplemental brief (hereinafter: brief) (Paper No. 17, filed March 18, 2003) and reply brief (Paper No. 19. filed July 7, 2003) for appellants' arguments there against. Only those arguments actually made by appellants have been considered in this decision. Arguments which appellants could have made but chose not to make in the brief have not been considered. See 37 CFR § 41.37(c)(1)(vii) (eff. Sept. 13, 2004).

OPINION

In reaching our decision in this appeal, we have carefully considered the subject matter on appeal, the rejections advanced by the examiner, and the evidence of lack of enablement, indefiniteness and obviousness relied upon by the examiner as

support for the rejections. We have, likewise, reviewed and taken into consideration, in reaching our decision, appellants' arguments set forth in the briefs along with the examiner's rationale in support of the rejections and arguments in rebuttal set forth in the examiner's answer.

Upon consideration of the record before us, we affirm-in-part. We begin with the rejection of claims 4-11 under 35 U.S.C. § 112, first paragraph, as lacking enablement.

The examiner's position (answer, page 4) is that the use of the term "concurrently" in claim 4 is not enabling because concurrently is defined by Webster's Dictionary as "operating or occurring at the same time, or running parallel and convergent." From these dictionary definitions, the examiner finds (id.) that the term concurrently requires that it takes the same amount of time to generate the NAK as it does to receive the packet. It is argued that "that the Applicant teaches that a NAK is produced and sent to the transmitter in sufficient time to abort sending the rest of the packet (see Figures 4 and 5 of the Applicant's disclosure) after a portion of the packet has been sent and prior to receiving the whole packet. The Examiner would like to point out that nowhere does the Applicant teach 'sending a NAK to the

originator of the primary packet concurrently with the

receiving'".

Appellants' position (brief, page 5) is that originally

filed claims 4, 5, and 9 include the "concurrently" language that

the examiner considers to be non-enabled. In addition,

appellants disagree with the examiner's interpretation of

"concurrently" in requiring that the time duration of the two

separate operations be the same. Appellants suggest (id.) that a

more reasonable definition of concurrently would be that the

occurrence of the two events need only overlap for some period of

time. It is argued (reply brief, pages 3 and 4) that even using

the examiner's definition of "concurrently," the definition

provided by the examiner does not indicate that to be convergent

requires meeting at all points, but rather, convergent is used in

the definition to indicate meeting at a single point.

We note at the outset that "[t]he first paragraph of 35

U.S.C. § 112 requires, inter alia, that the specification of a

patent enable any person skilled in the art to which it pertains

to make and use the claimed invention. Although the statute does

not say so, enablement requires that the specification teach

those in the art to make and use the invention without 'undue

experimentation.' In re Wands, 858 F.2d 731, 8 USPQ2d 1400 (Fed.

Cir. 1988). That some experimentation may be required is not fatal; the issue is whether the amount of experimentation required is 'undue.'" In re Vaeck, 947 F.2d 488, 495, 20 USPQ2d 1438, 1444 (Fed. Cir. 1991) (emphasis in original).

The Federal Circuit has set out a number of factors that are relevant to whether undue experimentation would be required to practice a claimed invention. They include "(1) the quantity of experimentation necessary, (2) the amount of direction or guidance presented, (3) the presence or absence of working examples, (4) the nature of the invention, (5) the state of the prior art, (6) the relative skill of those in the art, (7) the predictability or unpredictability of the art, and (8) the breadth of the claims." In re Wands, 858 F.2d at 737, 8 USPQ2d at 1404 (Fed. Cir. 1988).

After considering the evidence of record in light of the Wands factors, we find that the examiner has made no assertion that undue experimentation would be required for an artisan to make and use appellants' invention. In fact, the examiner has not asserted that any experimentation would be needed to carry out the invention. Nor has the examiner addressed any of the Wands factors, that might be appropriate to this application. The examiner's assertion (answer, page 5) that appellants have used the term "concurrently" when they should have said "during,"

is unrelated to the issue of enablement. As the examiner has not

made any assertion or provided any reasoning to the effect that

undue experimentation would have been needed to make and use the

invention, we find that the examiner has failed to establish a

prima facie case of lack of enablement of claims 4-11.

Accordingly, the rejection of claims 4-11 under 35 U.S.C. § 112,

first paragraph, as lacking enablement, is reversed.

We turn next to the rejection of claims 4-11 under 35 U.S.C.

§ 112, second paragraph, as being indefinite. The examiner's

position (answer, page 5) is to the effect that "concurrently" is

misdescriptive of "during."

Appellants assert (brief, page 4) that the examiner's

position of "concurrently" necessarily implies that two

operations require the same amount of time, is not "harmonious

with the examiner's own definition from Webster's Dictionary. We

agree. According to the definition provided by the examiner

(with respect to the rejection under 35 U.S.C. § 112, first

paragraph, which we consider to be pertinent to the rejection

under 35 U.S.C. § 112, second paragraph) "concurrently" means

operating or occurring at the same time or running parallel and

convergent. We find nothing in the examiner's definitions that

would require the two operations of primary packet transmission

and NAK transmission to take the same amount of time. All that

is required by the definition is that the NAK is generated during

the time of the primary packet transmission. With this

interpretation of the definition of "concurrently" we find the

language of claims 4-11 to be definite within the meaning of 35

U.S.C. § 112, second paragraph. Although the term "during" could

possibly be used in place of the term "concurrently," we find no

reason for appellants to be required to change a term found in

the originally filed disclosure, which is clear and definite.

From all of the above, the rejection of claims 4-11 under 35

U.S.C. § 112, second paragraph is reversed.

We turn next to the rejection of claims 1-11 under 35 U.S.C.

§ 103(a) as being unpatentable over Boal. Appellants divide the

claims into four groups (brief, page 4) and separately argue each

group, and in particular, argue the one independent claim from

each group, namely, claims 1, 4, 5, and 9. Accordingly, we

select claims 1, 4, 5, and 9 as representative of the groups. We

begin with Group I, claims 1-3.

In rejecting claims under 35 U.S.C. § 103, it is incumbent

upon the examiner to establish a factual basis to support the

legal conclusion of obviousness. See In re Fine, 837 F.2d 1071,

1073, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). In so doing, the

examiner is expected to make the factual determinations set forth

in Graham v. John Deere Co., 383 U.S. 1, 17, 148 USPQ 459, 467

(1966), and to provide a reason why one having ordinary skill in

the pertinent art would have been led to modify the prior art or

to combine prior art references to arrive at the claimed

invention. Such reason must stem from some teaching, suggestion

or implication in the prior art as a whole or knowledge generally

available to one having ordinary skill in the art. Uniroyal,

Inc. v. Rudkin-Wiley Corp., 837 F.2d 1044, 1051, 5 USPQ2d 1434,

1438 (Fed. Cir. 1988); Ashland Oil, Inc. v. Delta Resins &

Refractories, Inc., 776 F.2d 281, 293, 227 USPQ 657, 664 (Fed.

Cir. 1985); ACS Hosp. Sys., Inc. v. Montefiore Hosp., 732 F.2d

1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984). These showings

by the examiner are an essential part of complying with the

burden of presenting a prima facie case of obviousness. Note In

re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir.

1992). If that burden is met, the burden then shifts to the

applicant to overcome the prima facie case with argument and/or

evidence. Obviousness is then determined on the basis of the

evidence as a whole. See id.; In re Hedges, 783 F.2d 1038, 1039,

228 USPQ 685, 686 (Fed. Cir. 1986); In re Piasecki, 745 F.2d

1468, 1472, 223 USPQ 785, 788 (Fed. Cir. 1984); and In re
Rinehart, 531 F.2d 1048, 1052, 189 USPQ 143, 147 (CCPA 1976).

The examiner's position (answer, pages 7 and 8) is that Boal
teaches transmitting packets having a header frame and an
optional data frame. The examiner asserts that Boal teaches
receiving a NAK while the packet is being transmitted, and
aborting the transmission without sending all of the packet. The
examiner notes that Boal does not explicitly teach the specific
application of the method taught in the Boal application to a bus
environment using primary packets. From Boal's disclosure that
the method is suitable for a packet bus for interconnecting
systems, that it would have been obvious to use a full duplex
bus. In the examiner's opinion, an artisan would have been
motivated to use the system of Boal for interconnecting computer
systems, using a full duplex bus, "to 'reduce wastage of bus time
and improve the reliability and error tolerance of packet
communications'."

Appellants' position (brief, page 6) is that claim 1
requires transmitting on a full duplex bus, and receiving a NAK
while the primary packet is being transmitted. It is argued
(id.) that Boal does not teach or suggest receipt of a NAK while
the packet is being transmitted because: (a) the connectionless

packets do not have a reply aspect to them, and that if there is

no reply component, there can be no reception of a NAK while the

primary packet is being transmitted; (b) with the SAR packet, the

receiver does not generate the reply until after the entire

header is received. Appellants add that Boal does not generate

or send a reply at any time prior to the end of transmission of

the header, so there cannot be a reception of a NAK while the

primary packet is being transmitted; (c) with an LPDR packet, the

first reply is generated after the header frame. Thus, the first

reply is received during a wait state, not during transmission of

the primary packet. The second reply is sent after the data

frame is received, not during transmission of a primary packet;

(d) in the simplified version of the LDPR packet, the data frame

is sent immediately following the header frame. The processed

reply is sent after the header and data frames have been

received. Thus, the processed reply cannot be received during

transmission of the packet because the transmission of the packet

has already been completed by the time the processed reply is

sent.

Appellants further assert (brief, page 8) that with a LIPR

packet, transmission is halted after the header frame is sent,

and the transmitter is unable to send the data frame until after

the processed reply is sent by the receiver. Thus, the system

must be delayed in a waiting state until the transmitter receives

the processed reply from the receiver. After the transmitter

receives the reply, the transmitter resumes transmission of the

data frame. Thus, the automatic reply cannot be received during

transmission of a primary packet since the transmission is

already complete by the time the automatic reply is generated.

Appellants add that Boal does not indicate, explicitly or

implicitly, transmission of a primary packet on a full duplex

bus, and that the absence of a full duplex bus could explain why

the transmitter and receiver of Boal are forced to take turns

transmitting and acknowledging.

From our review of Boal, we note at the outset that Boal

discloses (page 1) that "[t]he present invention relates to a

computer communications bus and controller, particularly but not

exclusively a packet bus suitable for interconnecting computer

systems." Boal further discloses (page 6) that only one system

can transmit on the bus at a time.

From these disclosures of Boal, we find that Boal does

disclose the system to be used for interconnecting computer

systems. However, because Boal's invention is directed to packet

information transmission in one direction at a time, we find that

Boal does not teach or suggest the use of a full duplex bus. The

only suggestion of using a full duplex bus in Boal comes from a

reading of appellants' disclosure. Thus, because Boal's

invention centers around one way transmission at any given time,

we find that an artisan would not have been taught to provide

Boal's system with a full duplex bus.

In our view, the only suggestion for modifying Boal in the

manner proposed by the examiner to meet the above-noted

limitation stems from hindsight knowledge derived from the

appellants' own disclosure. The use of such hindsight knowledge

to support an obviousness rejection under 35 U.S.C. § 103 is, of

course, impermissible. See, for example, W. L. Gore and Assocs.,

Inc. v. Garlock, Inc., 721 F.2d 1540, 1553, 220 USPQ 303, 312-13

(Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984).

With respect to the limitation "receiving a NAK while the

primary packet is being transmitted" we find from the disclosure

of Boal that (page 3) reply frames may be sent after the header

frame and or after the data frame. Boal further discloses that a

reply frame is sent after a header is received and before a data

frame is transmitted. Boal additionally discloses (id.) that a

reply to a header may indicate that the transmitter should abort

sending the data, and that reply frames sent after the data frame

may indicate the integrity of the data received, and/or whether the system has received the data successfully.

From the disclosure of Boal, we find that with the exception of the SAR packet, which has no separate packet data frame, that Boal waits for the reply from the receiver before transmitting the data packet. Claim 1 recites a primary packet, but does not refer to header packets and data packets. From the terminology used, we find that even though the system waits for the reply before transmitting the data packet, that this process is all part of an overall sending of a primary packet which includes a header frame and a data frame. Accordingly, we find that Boal receives a NAK while the primary packet is being transmitted, and can abort the transmission without sending all of the primary packet, i.e., the data frame.

We agree with the examiner's statement (answer, page 7) that in Boal, a NAK is received while the packet is being transmitted, but only to the extent that the system waits for receipt of the NAK before sending the data frame. While the system does wait between sending the header frame and the sending of the data frame, claim 1 does not recite header or data frames, but only refers to transmission of the primary packet. From the description of "primary packet" on pages one and two of the

specification, we find that primary packet includes both the
header frame and the data frame. We further agree with the
examiner (answer, page 7) that when the transmitter receives a
NAK, the transmitter does not send the data frame. However, as
Boal does not disclose or suggest transmitting on a full duplex
bus, we find that the examiner has failed to establish a _prima
facie_ case of obviousness of claim 1. Accordingly, the rejection
of claims 1-3 under 35 U.S.C. § 103(a) is reversed.

We turn next to independent claim 4. The examiner's
position can be found on pages 9 and 10 of the answer.
Appellants' assertions (brief, page 9) are similar to the
arguments presented with respect to claim 1. It is argued that
in Boal, there is no overlap between the primary packet receipt
and the sending of a NAK, so that the NAK is not sent
concurrently with receipt of the primary packet.

We note at the outset that claim 4, unlike claim 1, does not
recite transmission over a full duplex bus. The claim requires
identifying, during the receiving, that the node cannot
successfully accept the primary packet, and sending the NAK to
the originator of the primary packet during the receiving.
Nothing in the claim requires that the identifying takes place
during the transmission of the data frame. Nor does the claim

require that the NAK is sent concurrently with the receiving of

the data frame. Although in Boal, the transmission of the data

frame is delayed until the reply is received, and there is no

transmission of the NAK concurrently with the transmission of the

data frame, the claim, as broadly drafted, reads of the

transmission of Boal because the wait between the sending of the

header frame and the sending of the data packet are all part of a

transmission of the primary packet. Accordingly, we find that

Boal anticipates claim 4. We therefore affirm the rejection of

claim 4, under 35 U.S.C. § 103(a) as being obvious over Boal.

Lack of novelty is the ultimate of obviousness. See In re

Fracalossi, 681 F.2d 792, 794, 215 USPQ 569, 571 (CCPA 1982).

We turn next to claims 5-8 (Group III). Because claim 5

requires a full duplex bus, the rejection of claims 5-8 under

35 U.S.C. § 103(a) is reversed, for the reasons we reversed the

rejection of claim 1.

We turn next to claims 9-11. We note at the outset that

claim 9, unlike claims 1 and 5, does not recite a full duplex

bus. However, the claim recites "the NAK generated concurrently

with an ongoing arrival of the primary packet." Although we find

that the NAK is generated concurrently with the arrival of the

primary packet, for the reasons set forth, supra, with respect to

claim 4, we find that the term "ongoing' distinguishes from the

wait state between the receipt of the reply and the transmission

of the data frame.   Thus, we find that the teachings of Boal do

not establish a <u>prima facie</u> case of obviousness of claim 9.

Accordingly, the rejection of claims 9-11 under 35 U.S.C.

§ 103(a) is reversed.

CONCLUSION

The decision of the examiner to reject claims 4-11 under 35

U.S.C. § 112, first paragraph is reversed.   The decision of the

examiner to reject claims 4-11 under 35 U.S.C. § 112, second

paragraph is reversed.   The decision of the examiner to reject

claims 1-3 and 5-11 under 35 U.S.C. § 103(a) is reversed.   The

decision of the examiner to reject claim 4 under 35 U.S.C.

§ 103(a) is affirmed.

No time period for taking any subsequent action in
connection with this appeal may be extended under 37 CFR
§ 1.136(a)(1)(iv).

AFFIRMED-IN-PART

JERRY SMITH   )
Administrative Patent Judge   )
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)
)
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Administrative Patent Judge   )   AND
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